

REMARKS

The Examiner is thanked for indicating that claims 9, 11-12, and 16 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reconsideration of this application is respectfully requested in light of the foregoing amendments and the following remarks.

Claims 1 and 7 have been amended for reasons unrelated to patentability, including at least one of: to explicitly present one or more elements implicit in the claim as originally written when viewed in light of the specification thereby not narrowing the scope of the claim, to detect infringement more easily, to enlarge the scope of infringement, to cover different kinds of infringement (direct, indirect, contributory, induced, and/or importation, etc.), to expedite the issuance of a claim of particular current licensing interest, to target the claim to a party currently interested in licensing certain embodiments, to enlarge the royalty base of the claim, to cover a particular product or person in the marketplace, and/or to target the claim to a particular industry.

Claims 1-20 are now pending in this application. Claim 1 is the independent claims.

I. The Anticipation Rejection

Claims 1-2 were rejected as anticipated under 35 U.S.C. §102(b). In support of the rejection, Shapiro (U.S. Patent No. 5,043,729) was cited. This rejection is respectfully traversed.

Shapiro fails to establish a prima facie case of anticipation. See MPEP 2131. To anticipate expressly, the “invention must have been known to the art in the detail of the claim; that is, all of the elements and limitations of the claim must be shown in a single prior art reference, arranged as in the claim”. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291 (Fed. Cir. 2001). The single reference must describe the claimed subject matter “with sufficient clarity and detail to establish that the subject matter existed in the

prior art and that its existence was recognized by persons of ordinary skill in the field of the invention”. *Crown Operations Int’l, LTD v. Solutia Inc.*, 289 F.3d 1367, 1375, 62 USPQ2d 1917, 1921 (Fed. Cir. 2002). Moreover, the prior art reference must be sufficient to enable one with ordinary skill in the art to practice the claimed invention. *In re Borst*, 345 F.2d 851, 855, 145 USPQ 554, 557 (C.C.P.A. 1965), *cert. denied*, 382 U.S. 973 (1966); *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354 (Fed. Cir. Jan. 6, 2003) (“A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled.”)

Specifically, claim 1, from one of which claims 2-20 depend, recite “a tunable dielectric film having a dielectric constant tunable at approximately 300 degrees K”. Shapiro does not teach expressly or inherently “a tunable dielectric film having a dielectric constant tunable at approximately 300 degrees K”. Accordingly, it is respectfully submitted that the rejection of claim 1 is unsupported by Shapiro and should be withdrawn. Also, the rejection of claims 2-20, each ultimately depending from independent claim 1, is unsupported by Shapiro and also should be withdrawn.

II. The Obviousness Rejection

Claims 3-8, 10, 13-15, and 17-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over various combinations of Shapiro (U.S. Patent No. 5,043,729) in view of Yandrofski (U.S. Patent No. 5,589,845). These rejections are respectfully traversed.

None of the cited references, either alone or in any combination, establish a *prima facie* case of obviousness. “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim

limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." See MPEP § 2143.

Shapiro allegedly recites "dielectric layers 72, 74, 76, and 78 is selected to have a suitable **dielectric constant**". See col. 5 lines 55-57.

Yandrofski alleged recites "high temperature superconducting (HTSC) materials" exhibiting superconductivity at temperatures up to 127 degrees K.

Independent claim 1 recites "a tunable dielectric film having a dielectric constant tunable at approximately 300 degrees K". Shapiro does not expressly or inherently teach or suggest "a tunable dielectric film having a dielectric constant tunable at approximately 300 degrees K". Yandrofski does not overcome the deficiencies of Shapiro.

Thus, even if there were motivation or suggestion to modify or combine the cited references (an assumption with which the applicant disagrees), and even if there were a reasonable expectation of success in combining or modify the cited references (another assumption with which the applicant disagrees), the cited references still do not expressly or inherently teach or suggest **every** limitation of the independent claims, and consequently fail to establish a *prima facie* case of obviousness.

Because no *prima facie* rejection of any independent claim has been presented, no *prima facie* rejection of any dependent claim can be properly asserted. Consequently, reconsideration and withdrawal of these rejections is respectfully requested.

In addition, claim 15 recites "the tunable dielectric film has a dielectric constant of greater than 300". Yandrofski does not expressly or inherently teach or suggest "the tunable dielectric film has a dielectric constant of greater than 300". Shapiro does not overcome the deficiencies of Yandrofski. Consequently, reconsideration and withdrawal of the rejection of claim 15 is respectfully requested.

Further, claim 19 recites “the tunable dielectric film has a dielectric constant between 70 and 600, a tuning range of 20 to 60 %, and a loss tangent between 0.008 and 0.03 at K and Ka bands”. Shapiro does not, expressly or inherently, teach or suggest “the tunable dielectric film has a dielectric constant between 70 and 600, a tuning range of 20 to 60 %, and a loss tangent between 0.008 and 0.03 at K and Ka bands”. Yandrofski does not overcome the deficiencies of Shapiro. Consequently, reconsideration and withdrawal of the rejection of claim 19 is respectfully requested.

III. Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

Claims 1-20 recite a “phase shifter comprising a tunable dielectric film having a dielectric constant tunable at approximately 300 degrees K”, which none of the art of record teaches or suggests.

Claim 9 recites “wherein the first impedance matching section comprises a first tapered coplanar waveguide section; and wherein the second impedance matching section comprises a second tapered coplanar waveguide section”, which none of the art of record teaches or suggests.

Claim 11 recites “a third electrode position adjacent a first side of the first electrode opposite the conductive strip to form a third gap between the first electrode and the third electrode; and a fourth electrode position adjacent a first side of the second electrode opposite the conductive strip to form a fourth gap between the second electrode and the fourth electrode”, which none of the art of record teaches or suggests.

Claim 12 recites “a conductive dome electrically connected between the first and second electrodes”, which none of the art of record teaches or suggests.

Claim 15 recites, “the tunable dielectric film has a dielectric constant of greater than 300”, which none of the art of record teaches or suggests.

Claim 16 recites, "a second substrate positioned adjacent to an end of the first substrate; a microstrip line positioned on a surface of the second substrate; and a connection between the microstrip line and a conductive strip of the waveguide", which none of the art of record teaches or suggests..

Claim 19 recites "the tunable dielectric film has a dielectric constant between 70 and 600, a tuning range of 20 to 60 %, and a loss tangent between 0.008 and 0.03 at K and Ka bands", which none of the art of record teaches or suggests.

CONCLUSION


It is respectfully submitted that, in view of the foregoing amendments and remarks, the application as amended is in clear condition for allowance. Reconsideration, withdrawal of all grounds of rejection, and issuance of a Notice of Allowance are earnestly solicited.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. §1.16 or §1.17 to Deposit Account No. 50-2504. The Examiner is invited to contact the undersigned at 434-972-9988 to discuss any matter regarding this application.

Respectfully submitted,

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